

### ABSTRACT OF THE DISCLOSURE

A reflective type projection optical system has good reflection characteristics with X rays and can correct aberrations well while controlling the size of reflective mirrors. The projection optical system includes six reflective mirrors and forms a reduced image of a first plane onto a second plane. The system includes a first reflective image forming optical system (G1) for forming an intermediate image of the first plane and a second reflective image forming optical system (G2) for forming an image of the intermediate image of the second plane. The first reflective image forming optical system has, in order of an incidence of light from the side of the first plane, a first reflective mirror (M1), an aperture stop (AS), a second reflective mirror (M2), a third reflective mirror (M3), and a fourth reflective mirror (M4). The second reflective image forming optical system has, in order of the incidence of the light from the side of the first plane, a fifth reflective mirror (M5) and a sixth reflective mirror (M6).

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